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Introduction

1. (a) The Soviet Bloc is independent to a large extent of outside sources of supply but nevertheless has many economic weaknesses which would become progressively more serious in a long drawn out war. In peacetime, however, it has few real needs although its standards of living are very low compared with the West. This situation will continue through mid-1953.

(b) The productive capabilities and economic resources of the Soviet Bloc are low in comparison with the West, although the Soviet Union particularly has made great strides in the production of most basic items, especially when compared with its own previous position, and will continue to make progress. Its relative position in comparison with the West will not be greatly changed by mid-1953. The USSR will, however, be in a much better position to meet its war requirements in most respects by this time.

(c) The Soviets will continue to stress increased production along a broad front including an attempt to maintain its present superior position in conventional weapons and armament. It will also undoubtedly attempt in this interval to increase its stockpile of atomic bombs with the objective of inflicting a crippling blow to US industry as well as to improve its position and ability to produce special electronic devices for guided missiles, radar, proximity fuses, and other specialized military items. To offset this situation and in view of its superior economic position and larger supply of atomic bombs, the West will build up its armed forces and production of military supplies.

Economic Weaknesses in the Soviet Bloc

2. (a) The principal economic weakness of the USSR and the Soviet Bloc as a whole for a major war would be a shortage of special electronic equipment especially for military items such as communication equipment, guided missiles, radar, proximity fuses and the like; precision instruments, special types of production equipment, machine tools and spare parts such as some types of ball and roller bearings and electrical equipment. There is also an acute shortage of skilled labor and some backwardness in industrial techniques which will make it difficult to overcome these deficiencies. The Soviet Bloc is also short of natural rubber, to the extent of about 80,000 tons annually to supplement its synthetic production of about 250,000 metric tons annually in the USSR. It is also short of tin, of which less than 15,000 tons are produced annually and about 25,000 tons are required. Non-ferrous metals such as copper and lead are in short supply in both the Soviet and Satellite economies, and the supply of zinc likewise in somewhat less

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tight. Mercury and cadmium have reportedly been smuggled into the USSR indicating a possible shortage of these critical metals. The Soviet Bloc is also short of ferro-alloying materials including molybdenum, cobalt, and tungsten, which are widely used and necessary in view of the stringency in high grade alloy steels. The most important of the non-metallic minerals which are either critically needed or in short supply are industrial diamonds. Among the chemicals which are in short supply, native sulphur is outstanding. Less serious, but still important, is the supply of food which although capable of meeting requirements at a low subsistence level is not making the progress envisioned in the plan and in many respects is below prewar level. Similarly, while not critical, certain grades of cotton and wool and hard fibers must be imported.

(b) A generally unemphasized additional weakness of the USSR is in connection with the mass production of certain selected scientific and military items. In spite of developments and scientific knowledge gained from the Germans, Czechs, and Hungarians, the electronic tubes produced while large in number are limited in variety for certain military uses important to all modern weapons systems for communications, target location and fire control. Included also in this connection are radar, guided missiles, and proximity fuses. The Soviets apparently have difficulty in producing certain components. The significant weakness in the Soviet electronics program is the limited capacity to produce tubes and components for large-scale expendable military items. Moreover there is a shortage of certain necessary materials such as molybdenum, tungsten wire, and diamond dies required to make the wire as well as paper and metal foil for condensers. Also there is a lack of specialized testing equipment. The same weaknesses extend to some degree to specialized equipment and items in other fields. There is no question however about the Soviets' ability to rapidly increase its production of certain conventional military items, e.g. aircraft from the present of about 10,000 units per year to 40,000 or more annually which was produced during World War II. However mass production of new developments generally in electronics, atomic energy and weapons, BW and CW will be slowed down somewhat by lack of skilled labor, testing equipment, and an inherent difficulty in translating new developments into production know-how.

(c) In general the weaknesses referred to will not be overcome by mid-1953 mainly because the Soviet Bloc is dependent at least in part on outside sources for many of the items mentioned. This situation will likely continue through mid-1953 both because of lack of skilled labor and raw materials. The Soviets will no doubt alleviate the situation by stockpiling, of which there is considerable evidence. They may also procure more tin and tungsten from China. In wartime they could substitute and interchange to some extent, e.g. among the ferro-alloying materials. Natural rubber to supplement the synthetic product and additional supplies of tin would have to be obtained from the Dutch East Indies and Malaya in time of war. Yugoslavia may be the key to substantial additional supplies

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of copper and lead, as it produces about twice the copper and an equal amount of lead as the Eastern European Satellites. At present imports and clandestine shipments supply a large proportion of these items and a vigorously enforced program of total economic warfare appears to be the only device for cutting off these supplies. Based on present indications, it is not likely however that the present situation will be radically different in this respect unless some unforeseen event, for example in the nature of a new aggression, occurs.

### Transportation

3. The peacetime requirements of transportation in the Soviet Bloc are apparently met but certain weaknesses would emerge in wartime. The railroads are by far the most important of the transportation systems comprising about 85 per cent of the freight carried. The highways are scarce and relatively poor precluding extensive long distance movement of cargo by truck lines. In the USSR motor freight is about four per cent of the total. In the Satellites it is about 10 per cent. Inland waterways comprising about eight per cent of freight carried in the USSR could be developed further; but is handicapped by lack of shipbuilding and repair facilities. A considerable proportion of freight in the Satellites is carried on the inland waters. The Soviets have a sizable coastal traffic and the merchant fleet is expanding, but it is likewise handicapped by lack of shipbuilding and repair facilities. They do not now have and will not have by 1953 the shipping capacity to support an invasion of the Western Hemisphere. Among the Satellites, Poland only carries on any extensive overseas traffic. The principal strategic weakness of the transportation system, particularly the railroads, in the Soviet Bloc is a deficiency of automatic block signals and relatively poor roadbeds. The road network is also sparse and with relatively poor alignment for the support of possible Soviet military operations. Within the land mass of the Soviet Orbit, there is a strategic weakness in the poor transportation between east and west for, while the Trans-Siberian railway may be capable of taking care of peacetime freight requirements, it probably would restrict their ability to meet the demands of a major war. Moreover the change in gauge at or near the borders between the USSR and its European Satellites will handicap military operations. Transportation will keep pace with production in mid-1953, but the strategic infirmities will not be remedied by that time.

### Economic Strengths

4. (a) In spite of their weaknesses, the Soviet Union has made significant progress in the production of certain basic items such as coal, steel, petroleum, and electric power. Despite war destruction, all of these items have exceeded the prewar figure by very large increases and the 1950 plan figure in most cases by substantial amounts. The estimated production for 1950 in the USSR is 260 mmt of coal, 37.5 mmt of

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petroleum, and about 85 billion KWH electric power output. The production of steel exceeded the plan figure of 25.4 mmt. Other industries have shown similar progress, for example, primary aluminum production, used principally for aircraft frames, was 170 mmt in 1950 (70 mmt secondary). Extensive stockpiling of aluminum based on requirements is also indicated. Latest estimates indicate that progress in production of these major items is continuing and will do so through mid-1953 at a high rate of increase. It is estimated that in mid-1953 the yearly rate of production of coal will be well over 300 mmt; of petroleum between 45 mmt and 50 mmt, and the output of electric power will rise to 120 billion KWH. The annual rate of production of steel by this time should be over 35 mmt. Aluminum production will have been increased to an annual rate of about 250 thousand mt primary, and 75 thousand mt secondary. Moreover it appears from estimates made to date that all requirements of these important basic materials are or can be essentially met at present. The supply of coal will be ample and electric power is unlikely to restrict the war potential of the Soviet Bloc in spite of some indications of shortages in the Satellites. The petroleum supply and refinery capacity are ample for such products as motor fuel, kerosene, diesel oil and fuel oils. There is some question, however, of an ample supply of aviation gasoline (100/130 and upwards) desirable for long range bombers. This quality could be substituted however with some loss in efficiency. There is sufficient jet fuel to meet any foreseeable requirements. With the increase in production and use of jet aircraft there will be relatively less demand for high octane aviation fuel. The present deficiency of high octane aviation fuel for long range bombers will be eliminated by 1953 both by the increased use of jet fuel and the increased availability of high octane aviation gasoline. Moreover, vulnerability of aviation fuel installations will decrease as jet fuel requirements increase because of the nature of the equipment used to produce it. Moreover, the Soviets have sufficient numbers of aircraft of necessary types to carry out probable campaigns. There is little doubt about a sufficiency of these basic items in mid-1953 even for a sustained major war.

(b) Any examination of Soviet requirements must be related to a particular military operation or campaign. The assumed operation involves simultaneously an attack against Western Europe, including Italy, aerial bombardment against the British Isles, campaigns against the Near and Middle East, including Greece and Turkey, attacks with limited objectives in the Far East and campaigns against the Iberian and Scandinavian peninsulas. The major Western powers have agreed that this is the most likely military operation which the USSR would undertake.

(c) The Soviets as a regular part of their production program are producing large quantities of conventional military items including aircraft of all types to add to an already large and disproportionate inventory in relation to the West inventory. The annual rate of production in 1950 of the Soviets has been estimated at 7,000 to 10,000 aircraft, 6,000 tanks and self-propelled guns and 10,000 pieces of artillery and a relatively small additional production in the Satellites.

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### The Soviet Bloc

5. In addition to the USSR the Soviet Bloc includes: Albania, Bulgaria, Czechoslovakia, East Germany, Hungary, Poland, Rumania, and China. As a group they are self-sufficient in food and generally deficient in industrial raw materials to support their industries. Bulgaria, particularly, as well as Hungary and Poland produces an exportable surplus of foods. Czechoslovakia, and East Germany are highly industrialized; Poland and Hungary are likewise essentially industrial countries. Poland is outstanding as a producer of coal; Rumania's chief product is petroleum, but otherwise it has a low degree of industrialization. Only East Germany and Czechoslovakia among the Eastern European Satellites has a high labor efficiency. Despite apparent deficiencies, however, the European Satellites make a significant contribution to the economy and war potential of the USSR in raw materials and manufactured products. Their economies are integrated with that of the USSR to some extent with each other. This integration is implemented mainly through CEMA (Council for Mutual Economic Assistance). Simultaneously there is a tendency, despite many obstacles, towards integration of transportation and communications with concomitant military advantages. The European Satellites also make a large contribution in manpower to the Orbit both for the military and the civilian economy. Of a total population (excluding China) of about 300,000,000 in the Bloc the Satellites contribute roughly one-third. The same ratio applies to the approximately 70,000,000 males of military ages, and out of approximately 90,000,000 males of working age the Satellites contribute about two-fifths. The efficiency of labor and management, however, is low throughout the Bloc by United States standards, and the expansion of industry has been faster than the training of workers and managers. Also, there is a shortage of trained personnel. The low standards of living, the lack of incentive and bureaucratic organization of industry all tend to create dissatisfaction and unrest as well as a low order of efficiency. There is without doubt a continuous strengthening and unification of the industrial and military potential of the Soviet Bloc which co-exists with considerable internal dissatisfaction and unrest particularly among the workers. The economy of China is mainly rural and operates at a low subsistence level. The urban industrial centers depend largely upon the West for raw materials, equipment, spare parts and supplies making the Chinese economy peculiarly vulnerable to economic warfare. The rail facilities connecting with the USSR are very limited and cutting off supplies from outside would hamper production and retard developments. It would also seriously affect military potential and China's ability to sustain large scale military operations.

### Economic Potential of Soviet Bloc Vs. the West-1951

6. Comparison of some basic items indicates a preponderant lead of the West over the Soviet Bloc. The production of steel of the West is more than four times that of the Soviet Bloc; the production of petroleum about ten times as much and of aluminum about sevenfold. The non-Soviet world produces about seven times more copper than the Soviet Bloc and the ratio of lead is about the same. The United States alone compared with the USSR produces over three times the amount of steel; more than six times the quantity of petroleum and three times the amount of primary aluminum as the USSR. Even a comparison of the Soviet Bloc production with that of Continental Europe shows them to be about the same for raw steel, and a somewhat greater production of primary aluminum for the latter. If the United Kingdom is included with Continental

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Europe the steel production is one and a half times that of the Soviet Bloc, but the aluminum production does not go up in the same ratio. Electric power production of the United Kingdom and Continental Europe combined is considerably more than that of the Soviet Bloc, and coal production is about the same. Copper, lead, tin, zinc, sulphur, rubber, wool and cotton are deficient in both areas. Nevertheless, availability of these materials is in general greater in Western Europe than in the Soviet Orbit. Western Europe is a deficit area with regard to food supplies. On the above basis the Soviets would about double their overall availability of many basic items (petroleum excluded) in over-running Western Europe. However, they would still be considerably behind the United States. On the question of petroleum Western Europe and the United Kingdom combined produce only a fraction of that produced in the Soviet Bloc. The Near East and the Middle East, however, would contribute to the power in control about twice the production of crude oil as that of the Soviet Bloc.

#### Western European Rearmament

7. Western Europe has made great progress in military planning. Military budgets are 75 per cent higher than in 1950, which is just short of the goal set by the planners. Military production has run 70 per cent which represents only about 80 per cent of the target, showing notable progress. Conscription service for practically all of the Pact nations has been extended to two years. The UK has particularly made a noteworthy effort in defense plans. Four divisions for Germany are promised and the men as well as logistical support are ahead of schedule. On the home front, there are about three-quarters of a million men in the armed forces and expenditures for armament have almost doubled (to about 1.4 billions of dollars) in the past year. France, because of its complex internal problems, is lagging behind in meeting its defense commitments particularly in building Air Bases. Of its total military budget of 2.1 billions of dollars for defense about one-third is being eaten up by the costly war in Indo China, and about one-third of the remainder comes from funds furnished by the US. It has made good progress in weapon development but very poor progress in production. Of the remaining countries, Denmark with its small population of four millions has more than doubled its defense expenditures, but its Army is still small. The Netherlands is devoting about one-quarter of its total budget to military expenditures; it is making considerable progress and is on schedule particularly in producing aircraft. Its manpower contribution is still small but it has promised 6,000 men in the fall. Belgium has promised six divisions by the end of 1954 and already has one division in Germany and plans to have two more in readiness in the late fall. Its financial contribution, however, appears to have lagged somewhat. Norway with a population of about three million has a defense budget of eighty-four million dollars. Little is expected of it with regard to manpower. Italy's forces are near the limit of 300,000 imposed by the treaty and will remain so until the latter is changed. By the end of the year it will have five infantry divisions and several specialized brigades. It hopes to obtain 1.5 billion dollars in aid from the US in the form of weapons and equipment for training during the next three years. Portugal and Luxembourg are not yet represented at SHAPE. Sizeable plans are underway for

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cooperation by Spain, but it has not as yet been admitted to the Pact. The total number of divisions for 1951 is estimated at twenty-four with the US contributing an additional six. By the end of 1954 it is estimated that Western Europe will have fifty-two divisions. As against this the Soviet Bloc including East Germany has two hundred and thirty-five divisions at present.

Economic Potential of Soviet Bloc vs. the West - Mid-1953

8. It is hardly likely that the Soviets will be able to correct the economic weaknesses enumerated, e.g. rubber, tin, industrial diamonds, etc. by mid-1953 except by continued imports, both through regular channels and clandestinely, and by continued stockpiling. The production of non-ferrous metals and other materials in short supply will not increase sufficiently to change the rations (and relative economic strengths) already shown very significantly. The West could and will increase its production of basic metals and raw materials by much greater absolute amounts than the Bloc without materially affecting the already highly disproportionate production ratios between the West and the Soviet Bloc during the next two years. Production in the West will be focused mainly on aircraft, armament, weapons and military items generally both for its own rapidly growing armed forces and to arm Western Europe. Labor efficiency will increase and production generally will be stepped up at an accelerated pace, but will be mainly directed to decreasing the disparity between the present state of military preparedness of the Soviet Bloc and the West. Particular emphasis will be given to development of new tactical and strategic weapons to multiply their efficiency over conventional weapons. The Soviets in the meantime will continue production along a broad front with special emphasis on decreasing the gap in the stockpile of atomic bombs at present existing between the US and the USSR, and to develop production of special military items.

9. The relative strengths of the West and the Soviets cannot be measured solely by economic production and resources including manpower unless the important factor of living standards is also considered. Reduced to the same basis, and in a war of exhaustion it may be considered as a fair measure providing all other factors having a bearing are considered at the same time.

10. It may be concluded that despite some weaknesses in the Soviet Bloc and the large disparity between the economic resources and production of the West and the Soviet Bloc the latter are prepared at present and will become more so by mid-1953 by additional production and stockpiling to engage in a sustained major war, but not in a war of exhaustion. By 1953 the West will be in a much better position in armed strength and military supplies to engage in an exhaustive contest.

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